AMENDMENTS TO THE CLAIMS

Claim 1 (Previ usly amended):

A self-sustained pulsating laser diode having a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type, both the first cladding layer and the second cladding layer being arranged on a semiconductor substrate of the first conductivity type, the number of said quantum wells being at least 5 and no greater than 10; and a layer thickness of a flat part of said second cladding layer having a current blocking structure being at least 300nm and no greater than 500nm; and a carrier density in said flat part of said second cladding layer having a current blocking structure being at least $1x10^{17}cm^{-3}$ and no greater than $5x10^{17}cm^{-3}$.

C1

Claim 2 (Previously amended): A self-sustained pulsating laser diode having a double-heterostructure comprising:

a first cladding layer of a first conductivity type;

a multi-quantum well active layer; and

a second cladding layer of a second conductivity type, both the first cladding layer and the second cladding layer being arranged on a semiconductor substrate of the first conductivity type,

an effective refractive index difference parallel to the layers (Δn) being at least $7x10^{-4}$ and no greater than $3x10^{-3}$, and a carrier density in

a flat part of said second cladding layer having a current blocking structure being at least $1x10^{17}cm^{-3}$ and no greater than $5x10^{17}cm^{-3}$.

Claim 3 (Previously amended): A self-sustained pulsating laser diode according to claim 1, wherein said cladding layers are made of a semiconductor that includes AlGaInP, and said active layer is a semiconductor that includes at least one of GaInP and AlGaInP.

Claim 4 (Previously amended): A self-sustained pulsating laser diode according to claim 2, wherein said cladding layers are made of a semiconductor that includes AlGaInP, and said active layer is a semiconductor that includes at least one of GaInP and AlGaInP.

C1 cont'd

Claim 5 (Original): A self—sustained pulsating laser diode according to claim 1, wherein the (001) plane of said semiconductor substrate is misoriented by 5 degrees or more toward the [110] direction, and wherein said multi-quantum well active layer consists of compressively strained quantum wells.

Claim 6 (Original): A self—sustained pulsating laser diode according to claim 2, wherein the (001) plane of said semiconductor substrate is misoriented by 5 degrees or more toward the [110] direction, and wherein said multi-quantum well active layer consists of compressively strained quantum wells.

Claim 7 (Original): A self—sustained pulsating laser diode according to claim 3, wherein the (001) plane of said semiconductor substrate is misoriented by 5 degrees or more toward the [110] direction, and wherein said multi-quantum well active layer consists of compressively strained quantum wells.

Claim 8 (Original): A self-sustained pulsating laser diode according to claim 4, wherein the (001) plane of said semiconductor substrate is misoriented by 5 degrees or more toward the [110] direction, and wherein said multi—quantum well active layer consists of compressively strained quantum wells.

Claim 9 (Cancelled)

Claim 10 (Cancelled)

C1 cont'd

Claim 11 (Previously amended): A self-sustained pulsating laser diode according to claim 1, wherein said carrier density in said flat part of said second cladding layer having a current blocking structure is less than $3x10^{17}cm^{-3}$.

Claim 12 (Previously amended): A self-sustained pulsating laser diode according to claim 2, wherein said carrier density in said flat part of said second cladding layer having a current blocking structure is less than $3x10^{17}cm^{-3}$.

Claim 13 (Cancelled)